

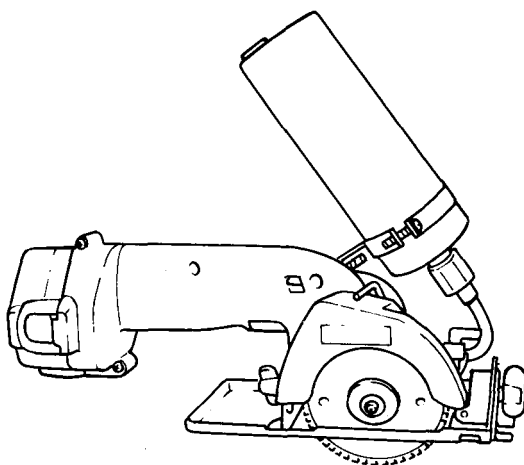
Makita

Cordless Cutter

85 mm (3-3/8") MODEL 4191DZ

85 mm (3-3/8") MODEL 4191DWA
With Battery Cartridge and Fast Charger

INSTRUCTION MANUAL



SPECIFICATIONS

• Model 4191D

Blade diameter	Cutting depth		No load speed (RPM)	Overall length	Net weight
	90°	45°			
85 mm (3-3/8")	0 - 24 mm (0 - 15/16")	0 - 18 mm (0 - 11/16")	1,000	316 mm (12-1/2")	2.1 kg (4.6 lbs)

• Battery Cartridge 1222

• Model DC1410 Fast Charger

Voltage	Input	Output	Charging time
12 V	A.C. only 50 - 60 Hz	D.C. 7.2 V - 14.4 V	1 Hr.

* Manufacturer reserves the right to change specifications without notice.

* Note: Specifications may differ from country to country.

WARNING: For your personal safety, READ and UNDERSTAND before using.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

IMPORTANT SAFETY INSTRUCTIONS

(For All Tools)

WARNING: WHEN USING ELECTRIC TOOLS, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, AND PERSONAL INJURY, INCLUDING THE FOLLOWING:

READ ALL INSTRUCTIONS.

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite injuries.
2. **CONSIDER WORK AREA ENVIRONMENT.** Don't use power tools in damp or wet locations. Keep work area well lit. Don't expose power tools to rain. Don't use tool in presence of flammable liquids or gases.
3. **KEEP CHILDREN AWAY.** All visitors should be kept away from work area. Don't let visitors contact tool or extension cord.
4. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place — out of reach of children.
5. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was intended.
6. **USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended; for example, don't use circular saw for cutting tree limbs or logs.
7. **DRESS PROPERLY.** Don't wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
8. **USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty.
9. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
10. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
11. **DON'T OVERREACH.** Keep proper footing and balance at all times.
12. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged, have repaired by authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean, and free from oil and grease.
13. **DISCONNECT TOOLS** when not in use, before servicing, and when changing accessories, such as blades, bits, cutters.

14. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
15. **AVOID UNINTENTIONAL STARTING.** Don't carry tool with finger on switch. Be sure switch is OFF when plugging in.
16. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
17. **STAY ALERT.** Watch what you are doing, use common sense. Don't operate tool when you are tired.
18. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by authorized service center. Don't use tool if switch does not turn it on and off.
19. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.
20. **REPLACEMENT PARTS.** When servicing, use only identical replacement parts.
21. **POLARIZED PLUGS.** To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.

VOLTAGE WARNING: Before connecting the tool to a power source (receptacle, outlet, etc.) be sure the voltage supplied is the same as that specified on the nameplate of the tool. A power source with voltage greater than that specified for the tool can result in **SERIOUS INJURY** to the user — as well as damage to the tool. If in doubt, **DO NOT PLUG IN THE TOOL.** Using a power source with voltage less than the nameplate rating is harmful to the motor.

IMPORTANT SAFETY INSTRUCTIONS FOR CHARGER & BATTERY CARTRIDGE

1. **SAVE THESE INSTRUCTIONS** — This manual contains important safety and operating instructions for battery charger.
2. Before using battery charger, read all instructions and cautionary markings on (1) battery charger, (2) battery, and (3) product using battery.
3. **CAUTION** — To reduce risk of injury, charge only MAKITA Battery Cartridge 7000, 7001, 7002, 9000, 9001, 9002, 9100, 9101, 9101A, 9102, 9102A, 9122, 1200, 1201, 1201A, 1210, 1211, 1202, 1202A, 1222 & 1422. Other types of batteries may burst causing personal injury and damage.
4. Do not expose charger to rain or snow.
5. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
6. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
7. Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
8. An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:
 - a. That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
 - b. That extension cord is properly wired and in good electrical condition; and
 - c. That wire size is at least as large as the one specified in the table below.

TABLE 1
RECOMMENDED MINIMUM AWG SIZE FOR
EXTENSION CORDS FOR BATTERY CHARGERS

Length of Cord (Feet)	25	50	100	150
AWG Size of Cord	18	18	18	16

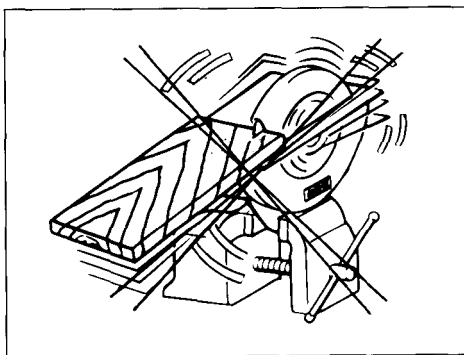
9. Do not operate charger with damaged cord or plug — replace them immediately.
10. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
11. Do not disassemble charger or battery cartridge; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
12. To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

ADDITIONAL SAFETY RULES FOR CHARGER & BATTERY CARTRIDGE

- 1. Do not charge Battery Cartridge when temperature is BELOW 10°C (50°F) or ABOVE 40°C (104°F).**
- 2. Do not attempt to use a step-up transformer, an engine generator or DC power receptacle.**
- 3. Do not allow anything to cover or clog the charger vents.**
- 4. Always cover the battery terminals with the battery cover when the battery cartridge is not used.**
- 5. A battery short can cause a large current flow, overheating, possible burns and even a breakdown.**
 - (1) Do not touch the terminals with any conductive material.**
 - (2) Avoid storing battery cartridge in a container with other metal objects such as nails, coins, etc.**
 - (3) Do not expose battery cartridge to water or rain.**
- 6. Do not store the tool and Battery Cartridge in locations where the temperature may reach or exceed 35°C (95°F).**
- 7. Do not incinerate the Battery Cartridge even if it is severely damaged or is completely worn out. The battery cartridge can explode in a fire.**

ADDITIONAL SAFETY RULES

1. Be aware that this is always in an operating condition, because it does not have to be plugged into an electrical outlet.
2. Check the wheel carefully for cracks or damage before operation. Replace cracked or damaged wheel immediately.
3. Use only flanges specified for this tool.
4. Be careful not to damage the spindle, flanges (especially the installing surface) or bolt. Damage to these parts could result in wheel breakage.
5. Hold the tool firmly.
6. Keep hands away from rotating parts.
7. Make sure the wheel is not contacting the workpiece before the switch is turned on.
8. Wait until the wheel attains full speed before cutting.
9. Stop operation immediately if you notice anything abnormal.
10. Do not attempt to lock the trigger in the "ON" position.
11. Never attempt to cut with the tool held upside down in a vise. This can lead to serious accidents, because it is extremely dangerous.



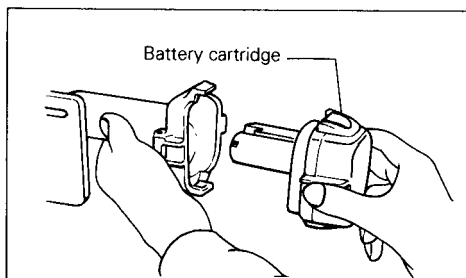
12. Before setting the tool down after completing a cut, be sure that the wheel has come to a complete stop.

SAVE THESE INSTRUCTIONS.

Installing or removing the battery cartridge 1222

- Always switch off the tool before insertion or removal of the battery cartridge.

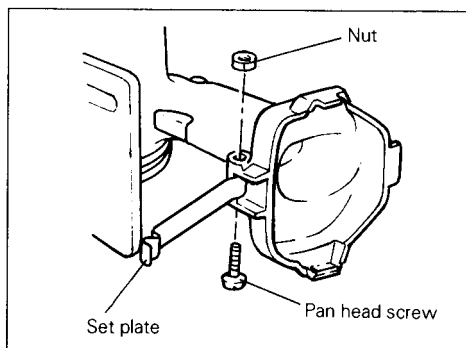
- To remove the battery cartridge, withdraw it from the tool while pressing the buttons on both sides of the cartridge.
- To insert the battery cartridge, align the tongue on the battery cartridge with the groove in the housing and slip it until it is locked with a little click.



- Do not use force when inserting the battery cartridge. If the cartridge does not slide in easily, it is not being inserted correctly.

Installing the set plate

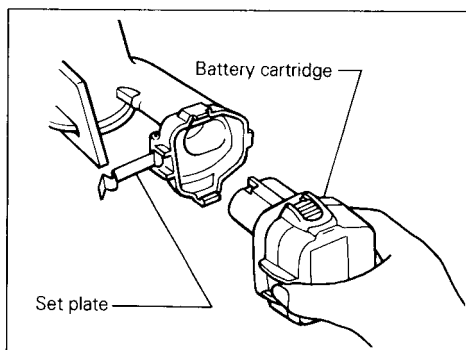
Always install the set plate when using battery cartridges 1200, 1201, 1201A, 1202 or 1202A. Install the set plate on the tool with the screw and nut provided as shown in the figure.



Installing or removing the battery cartridge 1200, 1201, 1201A, 1202 and 1202A.

- Always switch off the tool before insertion or removal of the battery cartridge.

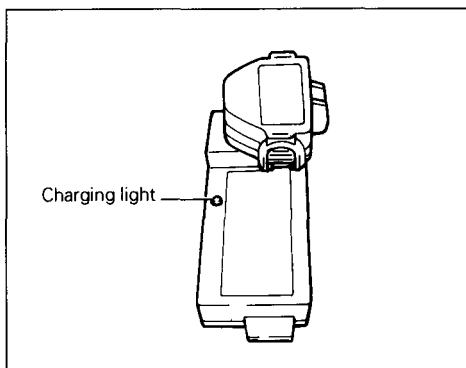
- To remove the battery cartridge, pull out the set plate on the tool and grasp both sides of the cartridge while withdrawing it from the tool.
- To insert the battery cartridge, align the tongue on the battery cartridge with the groove in the housing and slip it into place. Snap the set plate back into place. Be sure to close the set plate fully before using the tool.



- Do not use force when inserting the battery cartridge. If the cartridge does not slide in easily, it is not being inserted correctly.

Charging

- Your new battery cartridge is not charged. You will need to charge it before use. Use the fast charger Model DC1410 to charge the battery cartridge.
- Plug the fast charger into the proper A/C voltage source. The charging light will flash in green color.
- Insert the battery cartridge so that the plus and minus terminals on the battery cartridge are on the same sides as their respective markings on the fast charger. Insert the cartridge fully into the port so that it rests on the charger port floor.
- When the battery cartridge is inserted, the charging light color will change from green to red and charging will begin. The charging light will remain lit steadily during charging.
- When charging is completed, the charging light color will change from red to green.
- After charging, unplug the charger from the power source. Refer to the table below for the charging time.



Battery cartridge	Fast charger	DC1410
1200		Approx. 40 min.
1201 / 1201A		Approx. 50 min.
1202 / 1202A / 1222		Approx. 60 min.

CAUTION:

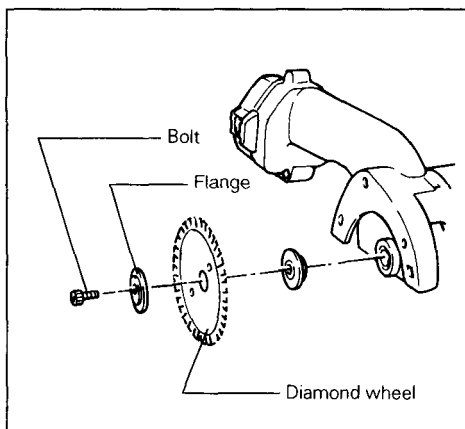
- The fast charger Model DC1410 is for charging Makita battery cartridge. Never use it for other purposes or for other manufacturer's batteries.
- When you charge a new battery cartridge or a battery cartridge which has not been used for a long period of time, it may not accept a full charge. This is normal condition and does not indicate a problem, You can recharge the battery cartridge fully after discharging it completely and recharging a couple of times.
- If you charge a battery cartridge from a just-operated tool or a battery cartridge which has been left in a location exposed to direct sunlight or heat for a long time, the charging light may flash in red color. If this occurs, wait for a while. Charging will begin after the battery cartridge cools. The battery cartridge will cool faster if you remove the battery cartridge from the fast charger.
- If the charging light flashes alternately in green and red color, a problem exists and charging is not possible. The terminals on the charger or battery cartridge are clogged with dust or the battery cartridge is worn out or damaged.
- If you wish to charge two battery cartridge, allow 15 minutes between chargings on the fast charger.

Installing or removing diamond wheel

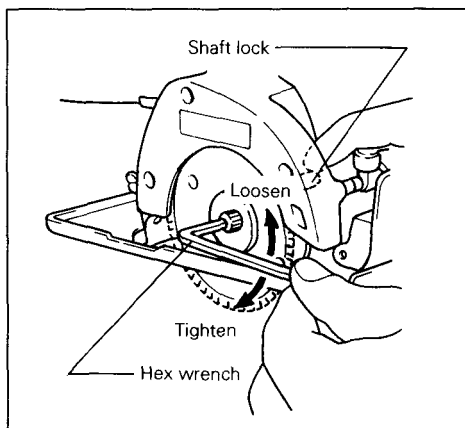
CAUTION:

Always be sure that the tool is switched off and the battery cartridge is removed before installing or removing the wheel.

To install the wheel, first loosen the bolt with the hex wrench and remove the bolt and the flange. Then mount the wheel, the flange and the bolt. The wheel should be mounted with the Makita name on the flange side.



Press the shaft lock so that the wheel cannot revolve. Use the hex wrench to tighten the bolt securely.



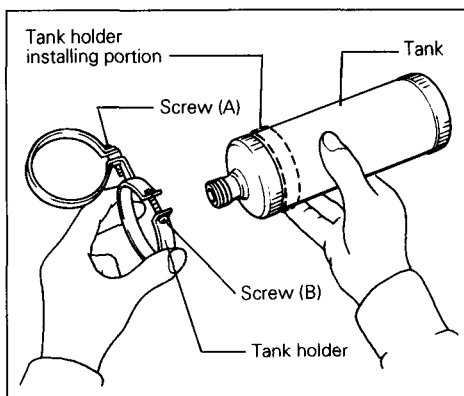
To remove the wheel, follow the installation procedure in reverse.

CAUTION:

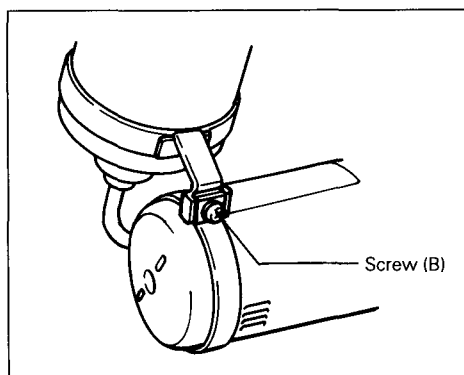
- When installing the wheel, be sure to tighten the bolt securely.
- Use only the Makita hex wrench to install or remove the wheel.

Installing water supply

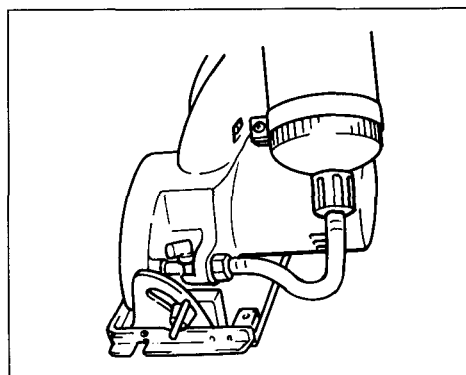
Attach the tank holder on the tank. The tank holder should be attached around the portion shown with the dotted line. Tighten the screw (A) to the extent that the tank can still turn within the tank holder.



Attach the tank holder onto the motor housing. Tighten the screw (B) securely.



Connect the cap on the end of the polyvinyl tube to the mouth of the tank. Turn the tank clockwise when making the connection. Then tighten the screw (A) securely to secure the tank.

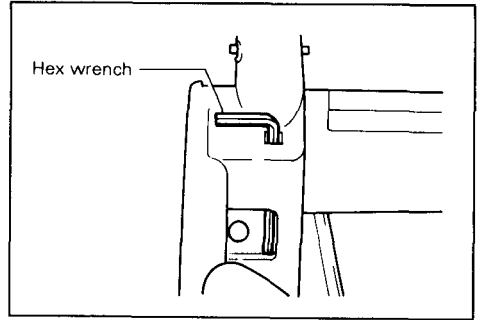


CAUTION:

If you find the polyvinyl tube is bent like a "V" or has been strained excessively after installing the water supply, loosen the screw (B) and adjust the position of the tank to alleviate the bent, pinched or strained condition.

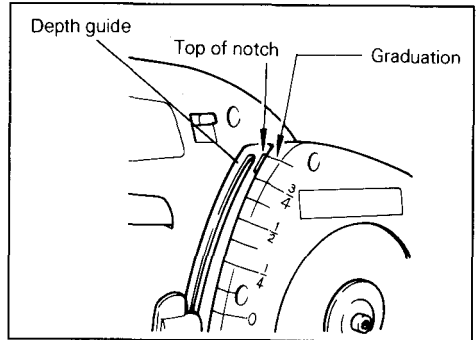
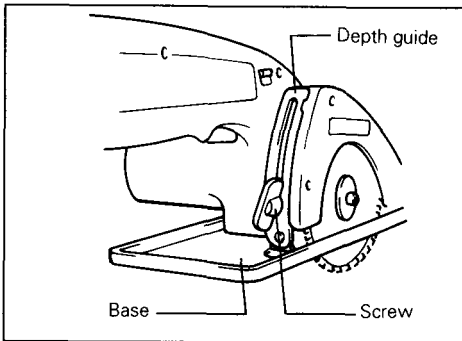
Hex wrench storage

When not in use, the hex wrench can be conveniently stored.



Adjusting the depth of cut

Loosen the screw on the depth guide and move the base up or down. You can read the depth of cut by aligning the top of the notch in the depth guide with the graduations on its right side. (Note: This can be done for 0° bevel cutting only.) At the desired depth of cut, secure the base by tightening the screw.

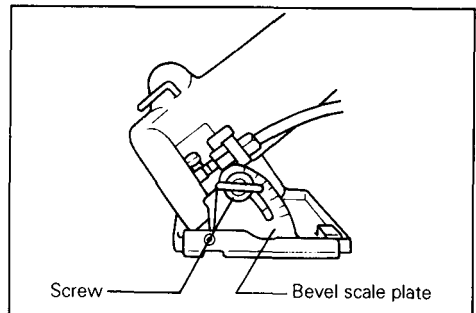


CAUTION:

- Use a shallow depth of cut when cutting thin workpiece for cleaner, safer cuts.
- After adjusting the depth of cut, always tighten the clamp screw securely.

Bevel cutting

Loosen the screw on the bevel scale plate on the front of the base. Set for the desired angle (0° — 45°) by tilting accordingly, then tighten the clamp screw securely.



CAUTION:

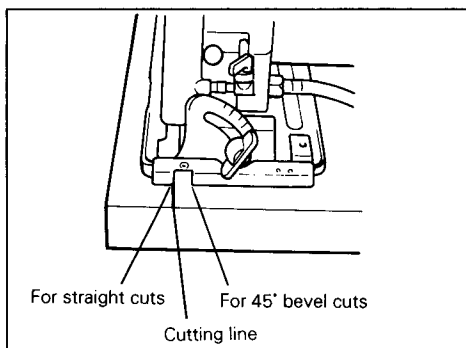
After adjusting the depth of cut and bevel cutting angle, be sure to tighten the screw.

Sighting

The front of the base is notched to provide two guide edges.

For straight cuts, align the edge with 0° engraved on it with your cutting line on the workpiece.

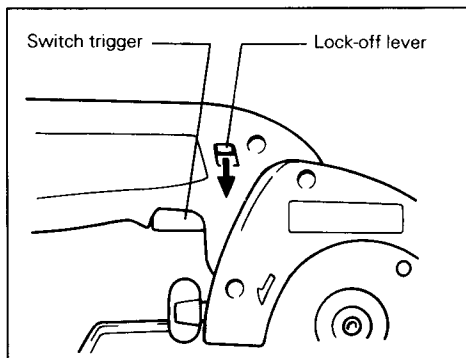
For 45° bevel cuts, align the edge with 45° engraved on it with your cutting line.



Switch action

To prevent the trigger from being accidentally pulled, a lock-off lever is provided.

To start the tool, slide the lock-off lever in the direction of the arrow and pull the trigger. Release the trigger to stop.

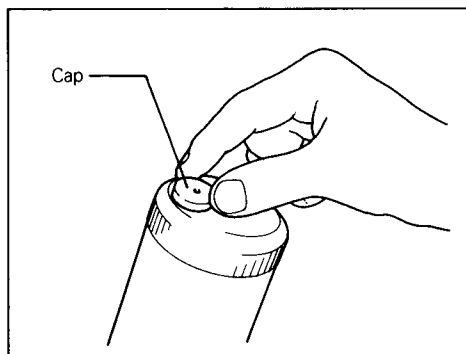


CAUTION:

Before inserting the battery cartridge into the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.

Water supply

Remove the cap on the tank and fill through the hole. Recap the tank. Be sure that the water cock is turned off when filling the tank with water.



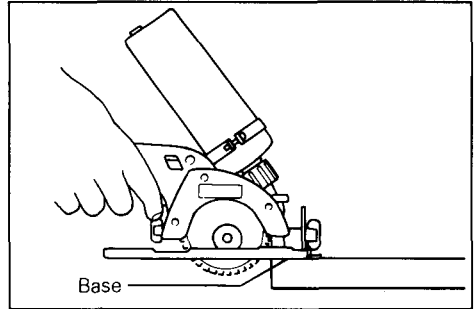
CAUTION:

When filling the tank with water, be careful not to let the tool get wet.

Operation

Hold the tool firmly. Set the base plate on the workpiece to be cut without the wheel making any contact. Then turn the tool on and wait until the wheel attains full speed. Feed water to the wheel by adjusting the water cock to obtain a gentle flow of water. Move the tool forward over the workpiece surface, keeping it flat and advancing smoothly until the cutting is completed. Keep your cutting line straight and your speed of advance uniform.

For fine, clean cuts, cut slowly. (When cutting glass plate 5 mm (3/16") thick, cut at about 250 mm/min (9-7/8"/min). When cutting tile 10 mm (3/8") thick, cut at about 300 mm/min (11-13/16"/min). Also slow down as you complete a cut to avoid breaking or cracking the workpiece being cut.



CAUTION:

- Be sure to hold the workpiece firmly down on a stable bench or table during operation.
- Do not twist or force the tool in the cut, or the motor may be overloaded or the workpiece may break.
- Do not use the tool with the wheel in an upward or sideways position.
- When cutting glass plate, it is recommended to attach a rubber plate (optional accessory) on the base of the tool to prevent the workpiece surface from being scratched.
- The wheel for Model 4191D/DW is a wet-type wheel for glass and tile applications. Be sure to feed water to the wheel during operation.
- If the cutting action of the wheel begins to diminish, dress the cutting edge of the wheel using an old discarded coarse grit bench grinder wheel or concrete block. Dress by pressing lightly on the outer edge of the wheel.

CAUTION:

If the tool is operated continuously until the battery cartridge has discharged, allow the tool to rest for 15 minutes before proceeding with a fresh battery.

MAINTENANCE

CAUTION:

Always be sure that the charger is unplugged and the battery cartridge is removed before attempting to perform inspection or maintenance.

After use

Brush off accumulation of dust on the base.

To maintain product SAFETY and RELIABILITY, repairs, maintenance or adjustment should be performed by Makita Authorized or Factory Service Centers, always using Makita replacement parts.

OPTIONAL ACCESSORIES

The accessories listed in this manual are available at an extra cost from your Makita distributor or Makita factory service center. Service centers are listed on the warranty card packed with your tool.

CAUTION:

These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. The accessories or attachments should be used only in the proper and intended manner.

• Hex wrench

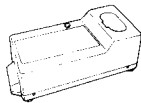
Part No. 783202-0



• Fast charger

Model DC1410

Part No. 113150-3

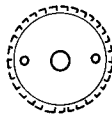


• Battery cover

Part No. 414938-7



• Diamond wheel



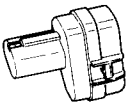
• Battery cartridge 1200

Part No. 192271-4

• High capacity battery 1201, 1202

Part No. 192296-8 (1201)

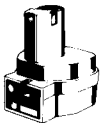
Part No. 192536-4 (1202)



• Power display battery (High cap.) 1201A, 1202A

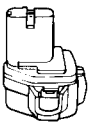
Part No. 192407-5 (1201A)

Part No. 192537-2 (1202A)



• High capacity battery 1222

Part No. 192598-2



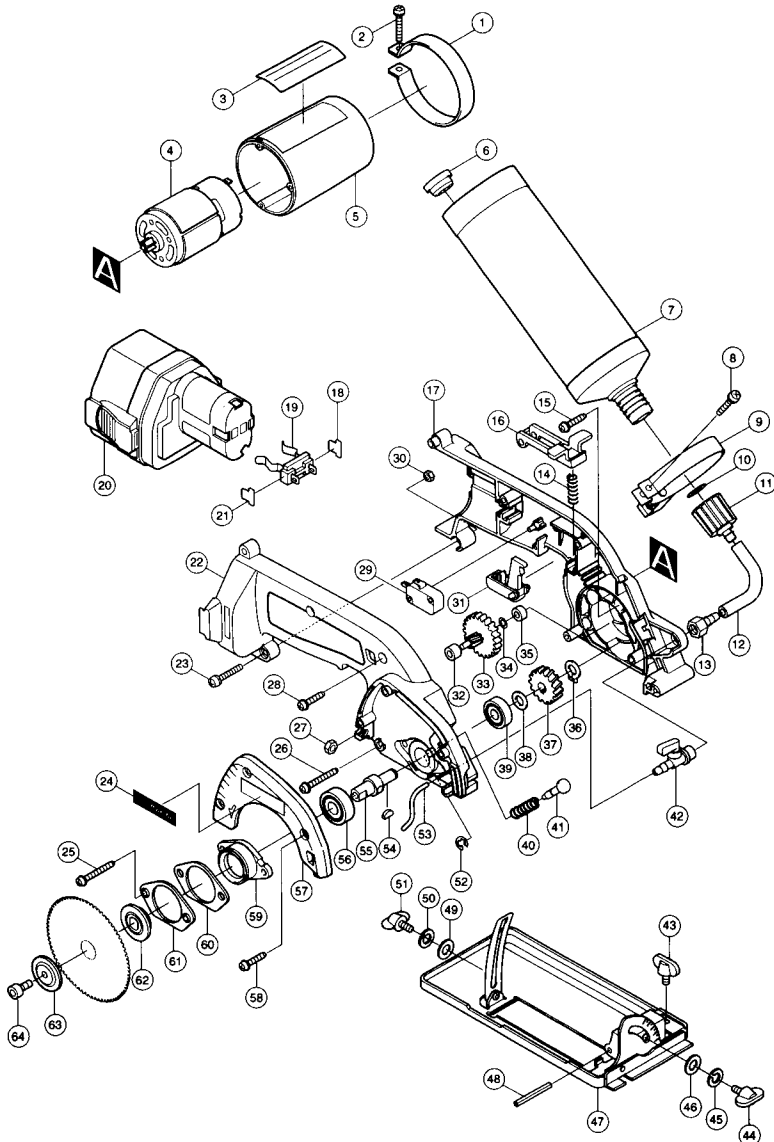
• Set plate

Part No. 343579-1



Part No.	Diameter (mm)	Hole diameter (mm)	Blade type	Use
724950-8C	85 (3-3/8")	15 (19/32")	Wet	General purpose
724950-8B	85 (3-3/8")	15 (19/32")	Wet	For glass cutting

85 mm (3-3/8") CORDLESS CUTTER Model 4191D



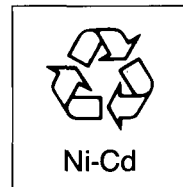
Note: The switch and other part configurations may differ from country to country.

ITEM NO.	NO. USED	DESCRIPTION	ITEM NO.	NO. USED	DESCRIPTION
<u>MACHINE</u>			<u>MACHINE</u>		
1	1	Band B	33	1	Gear Complete 8—68
2	1	Pan Head Screw M4x25 (With Washer)	34	1	Thin Washer 4
3	1	Name Plate	35	1	Plane Bearing 4
4	1	DC Motor 12 V	36	1	Retaining Ring 5—8
5	1	Motor Housing	37	1	Helical Gear 33
6	1	Cap	38	1	Flat Washer 8
7	1	Tank	39	1	Ball Bearing 608LB
8	1	Pan Head Screw M4x25 (With Washer)	40	1	Compression Spring 7
9	1	Tank Holder	41	1	Pin 5
10	1	Rubber Washer 12	42	1	Water Supply Cock Complete
11	1	Cap	43	1	Screw M5x10
12	1	Vinyl Tube 5	44	1	Screw M5x10
13	1	Nut	45	1	Spring Washer 5
14	1	Compression Spring 4	46	1	Flat Washer 5
15	3	Tapping Screw 4x18	47	1	Base
16	1	Lock Off Lever	48	1	Spring Pin 4—40
17	1	Housing Set (With Item 22)	49	1	Flat Washer 5
18	1	Rubber Sheet	50	1	Spring Washer 5
19	1	Battery Holder	51	1	Screw M5x10
20	1	High Capacity Battery 1222	52	1	Stop Ring E—4
21	1	Rubber Sheet	53	1	Nozzle
22	1	Housing Set (With Item 17)	54	1	Woodruff Key 3
23	1	Pan Head Screw M4x25 (With Washer)	55	1	Spindle
24	1	Makita Label	56	1	Ball Bearing 6000LLB
25	2	Tapping Screw Flange PT 4x30	57	1	Blade Case
26	1	Tapping Screw Flange PT 4x30	58	3	Tapping Screw 4x18
27	1	Hex. Nut M5	59	1	Bearing Box
28	3	Tapping Screw 4x18	60	1	Packing
29	1	Switch	61	1	Retainer
30	1	Hex. Nut M4	62	1	Inner Flange 28
31	1	Switch Lever	63	1	Outer Flange 28
32	1	Plane Bearing 4	64	1	Hex. Socket Head Bolt M5x12

Note: The switch and other part specifications may differ from country to country.

Recycling the Battery

The only way to dispose of a Makita battery is to recycle it. The law prohibits any other method of disposal.



To recycle the battery:

1. Remove the battery from the tool.
 2. a). Take the battery to your nearest Makita Factory Service Center
or
b). Take the battery to your nearest Makita Authorized Service Center or Distributor that has been designated as a Makita battery recycling location.
- *Call your nearest Makita Service Center or Distributor to determine the location that provides Makita battery recycling. See your local Yellow Pages under "Tools-Electric".*

MAKITA LIMITED ONE YEAR WARRANTY

Warranty Policy

Every Makita tool is thoroughly inspected and tested before leaving the factory. It is warranted to be free of defects from workmanship and materials for the period of ONE YEAR from the date of original purchase. Should any trouble develop during this one-year period, return the COMPLETE tool, freight prepaid, to one of Makita's Factory or Authorized Service Centers. If inspection shows the trouble is caused by defective workmanship or material, Makita will repair (or at our option, replace) without charge.

This Warranty does not apply where:

- repairs have been made or attempted by others;
- repairs are required because of normal wear and tear;
- The tool has been abused, misused or improperly maintained;
- alterations have been made to the tool.

IN NO EVENT SHALL MAKITA BE LIABLE FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES FROM THE SALE OR USE OF THE PRODUCT. THIS DISCLAIMER APPLIES BOTH DURING AND AFTER THE TERM OF THIS WARRANTY.

MAKITA DISCLAIMS LIABILITY FOR ANY IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF "MERCHANTABILITY" AND "FITNESS FOR A SPECIFIC PURPOSE," AFTER THE ONE-YEAR TERM OF THIS WARRANTY.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

Makita Corporation of America

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